DOCUMENT RESUME

ED 290 056 CE 049 455

AUTHOR Ubadigbo, Fidelis N.; Gamon, Julia A.
TITLE Educational Strategies and Extent of Cooperation with Agri-Educators by Selected Agribusinesses.
PUB DATE Dec 87
NOTE 9p.; Paper presented at the American Vocational Association Convention (Las Vegas, NV, December 6-10, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Agribusiness; Agricultural Chemical Occupations; *Agricultural Education; *Cooperative Planning; *Cooperative Programs; Educational Strategies; Feed Industry; Information Dissemination; *Off Farm Agricultural Occupations; *School Business Relationship; State Surveys; Statewide Planning
IDENTIFIERS *Iowa

ABSTRACT

A study examined the educational strategies used by three Iowa agribusinesses--livestock feed, chemical/fertilizer production and distribution, and seed production and distribution. The goals of the study were to identify (1) different educational strategies used by the three types of agribusinesses, (2) the extent of cooperation between the agribusinesses and other educational agencies, and (3) the views of agribusinesses on the importance of supplying agriculture teachers with current information on selected agricultural topics. The sample of 84 agribusinesses included 33 livestock and feed, 40 chemical/fertilizer, and 11 seed corn businesses. All three types of agribusinesses reported substantial increases in their educational efforts since 1980. All three types of agribusinesses reported making high use of farm and home visits and meetings as forums for presenting educational information. Most of the agribusinesses surveyed used a wide variety of strategies to disseminate information to farmers. The only significant differences with respect to the use of different strategies by different types of agribusinesses occurred in the cases of "farmers dropping in at the office" and "use of television" (both of which were used much less frequently by the seed companies than by the other two agribusinesses). This study revealed a low level of cooperation between agribusinesses and local educational agencies (in contrast to other studies that have indicated a high degree of such cooperation). (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
F Ubadigbo
J Gamon
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED290056

EDUCATIONAL STRATEGIES AND EXTENT OF COOPERATION WITH AGRI-EDUCATORS BY SELECTED AGRIBUSINESSES

Fidelis N. Ubadigbo
Graduate Student
Department of Agricultural Education
Iowa State University
Ames, Iowa

Julia A. Gamon
Assistant Professor
Department of Agricultural Education
Iowa State University
Ames, Iowa

The agribusiness industry has become the world's biggest and most important business. The entire scope of agricultural activities is increasingly dependent on agribusiness. In addition to providing essential food and clothing, agribusiness "contributes about 20% to the gross national product and employs approximately 23% of the labor force." (Woolverton et al., 1985).

A developing role for agribusiness is in the educational field. Recent studies have indicated that more agribusinesses are serving as sources of educational information for farmers and vocational agricultural teachers (Hillyard, 1979; Johnson, 1982). The recent decrease in resources available to public agricultural education has stimulated interest in alternative delivery methods and cooperation between the public and private sectors.

There is a need to identify strategies used by agribusinesses in disseminating agricultural information and to determine the extent of cooperation between agribusinesses and agri-educators. More information is needed about the views of agribusinesses on the importance of supplying agriculture teachers with current information.

Exploration of different strategies used by agribusinesses to reach their clients with educational information would benefit agri-educators in their decision-making processes on programs and aid them in preparing students for positions in agribusiness. Information is needed about the willingness of agribusinesses to provide the educational materials, workshops, and cooperative ventures which can be an important supplement to the formal classroom setting (Harris, 1982).

PURPOSE AND OBJECTIVES

The purpose of this study was to explore the educational strategies used by three types of Iowa agribusinesses: livestock feed, chemical/fertilizer and seed. Objectives were to identify: 1) different educational strategies employed by the three types of agribusinesses, 2) extent of cooperation between agribusinesses and other educational agencies and 3) views of agribusinesses on the importance of supplying agriculture teachers with current information on selected agricultural topics.

PROCEDURES

The population for this study consisted of 555 companies representing three types of agribusinesses: livestock feed, chemical/fertilizer and seed as listed in the Directory of Iowa Manufacturers, Sixteenth edition, 1985-86. Approximately 15 percent of each population were randomly selected from the stratified sample. The resultant 84 samples included 33 livestock and feed, 40 chemical/fertilizer, and 11 seed corn businesses.

CE049455

Survey instruments were mailed to company officials who were asked to rate on a 99 point scale their company's educational activities. After a follow-up of the nonrespondents, a return rate of 59.52 percent was obtained. Five of the nonrespondents were contacted by telephone bringing the sample population number to 79 persons and the return rate to 63.29 percent. The means and standard deviations of responses to seven items were checked for differences between non-respondents and respondents and little or no difference existed.

Graduate students and faculty of the Department of Agricultural Education at Iowa State Univers ty assisted in development of the instrument which was based on the literature review and on information gathered from industry officials. To check for content validity, the instrument was reviewed prior to use by agribusiness representatives from companies not included in the study. An analysis of reliability was not done because of the type of questions asked on the instrument.

A 99 point scale was used to help respondents express their level of understanding of their company's activities. Ratings from the 99 point scale were transformed in order to weight highly responsive differences in the ends of the scale and diminish responses at the center of the scale. (Wolins & Dickenson, 1973).

ANALYSIS OF DATA

Item responses were divided by 100 and transformed (PROBIT) to a z scale of normal deviates. With the transformation, a "99" response was replaced with 2.33, a "50" with 0.00 and a "1" with -2.33. To eliminate negative integers, the normal deviates were multiplied by 100 and added to a constant, 500, resulting in a scale in which 500 signified a middle position.

Mean scores and standard deviations were computed for each item. Frequency counts and percentages were used to analyze descriptive data.

Analysis of variance (ANOVA) for an unequal number within groups was employed to test differences among the three types of agribusinesses. The computer program, Statistical Analysis Systems (SAS), procedure (PROC GLM) was used. A post-hoc analysis using the Scheffe' multiple range test was carried out to determine differences among groups for F-values beyond the assigned level (alpha=.05).

RESULTS

The 50 Iowa agribusinesses in the study tended to be small and long established in their communities. Forty-two percent had ten or fewer employees and ninety-five percent had been in operation more than ten years.

The study used as independent variables three types of agribusinesses, livestock feed, chemical/fertilizer and seed as identified in the Directory of Iowa Manufacturers 16th Ed., 1985-1986. Results of analysis indicated that a majority of the agribusinesses did not concentrate on one product and many dealt in all three.

All types of agribusinesses reported substantial increases in their educational efforts since 1980 with a mean of 540.03 for livestock feed, 528.58 for chemical fertilizer and 538.14 for seed.

There were significant differences at the .05 level among the three types of agribusinesses for two educational strategies (Table 1), "farmers dropping in at business office" and "use of television." All other strategies were used similarly by the three types of agribusinesses. A high use of "farm and home visits" and "meetings" was reported by all types. A pattern of wide use of a variety of information dissemination strategies rather than heavy use of a few methods was observed.

Table 1. Group means, standard deviations, and analyses of variance relating to extent of use of information dissemination strategies by types of agribusiness

Strategy	Livestock feed n Mean SD	Chemical/ fertilizer n Mean SD	Seed n Mean SD	F-value	Probability
Telephone conversation	17 501.75 90.94	24 521.19 77.14	8 491.49 86.74	0.49	0.61
Personal letter	17 441.20 76.01	21 463.23 84.44	8 447.27 87.21	0.36	0.70
Form letter	16 452.34 104.70	22 475.88 74.25	7 504.58 76.50	0.93	0.40
Farm (home) visits	16 596.37 116.89	24 595.04 87.66	7 540.01 57.56	1.02	0.37
Farmers dropping in at office	18 507.12 76.20	23 574.01 103.54	8 475.95 98.86	4.38	0.01**
Neighbors contacting neighbors	17 429.64 95.48	22 484.61 114.89	8 442.32 118.16	1.32	0.28
Contact through interns	11 339.76 91.09	19 374.40 97.42	6 353.79 104.31	0.46	0.63
Radio	15 482.41 111.06	22 414.13 97.87	7 421.75 114.00	1.99	0.15
Television	14 368.12 83.21	18 302.43 73.25	7 403.45 109.00	4.56	0.01**
Newspapers	17 493.68 70.53	22 470.90 116.41	8 462.64 94.70	0.38	0.68
Magazines/ periodicals	15 417.14 123.81	20 385.11 139.35	7 486.49 58.92	1.73	0.19

**Significant beyond the 0.01 level.

Strategy	Livestock feed n Mean SD	Chemical/ fertilizer n Mean SD	Seed n Mean SD	F-value	Probability
Posters	17 443.49 136.40	22 387.80 105.48	7 404.17 130.04	1.02	0.37
Bulletins	16 424.50 140.90	22 411.47 108.73	7 439.34 89.39	0.16	0.85
Brochures	17 527.41 136.89	24 485.86 126.61	7 525.85 54.23	0.54	0.59
Newsletters	17 502.84 127.58	23 559.49 107.91	8 517.59 74.89	1.36	0.27
Catalogs	11 367.05 147.01	18 322.85 101.40	8 444.91 131.05	2.76	0.08
Flyers	14 430.29 137.14	22 412.59 110.28	7 446.31 98.04	0.25	0.78
Farm demonstrations/ plots	16 471.02	23 509.42	8 550.93	2.14	0.12
Sponsoring community program	16 453.55 91.92	21 442.33 102.98	7 404.38 98.84	0.62	0.54
Meetings	17 532.31 78.84	24 559.67 83.51	8 530.43 102.28	0.66	0.52
Exhibitions/ trade fair	13 472.56 107.52	21 401.25 136.41	8 482.77 101.48	2.00	0.15
Other	4 357.56 180.39	4 331.86 128.98	2 409.90 201.58	0.15	0.86

Means were relatively low for the variables related to cooperation between agribusinesses and other groups (Table 2). The extent of cooperation was rated as seldom with a grand total mean of 459.83. The standard deviations were high which indicated a wide variation in responses.

The low level of cooperation in this study is contrary to the high level of cooperation found by others (Bowen, 1986; Pascalar, 1986). The relatively low level of cooperation existing between agribusinesses, vocational agriculture programs and other educational agencies may be due to lack of opportunity for cooperation. Some of the agribusinesses may be geographically located at a distance from high school, area or university agriculture programs.

The programs listed in Table 3 are ones that were identified by a committee of teachers as topics to be considered for inservice meetings in Iowa. The agribusinesses in the study thought it was important to supply teachers with up-to-date information on all of these programs except for "hay and pasture management" and "wildlife management" which were rated as somewhat important.

All three types of agribusinesses rated "agricultural marketing" very highly with the following means: livestock feed (x=611.20), chemical/fertilizer (x=623.55), and seed (x=680.37). "New skills for new careers" was also rated highly by all. These findings agreed with the call for teachers to emphasize agribusiness entrepreneurship and marketing of agricultural products as reported by McCormick (1986) and Bowen (1986).

The Scheffe' test was used to find the significant difference (a=.05) between chemical/fertilizer and seed agribusinesses on the variable "diversification in agriculture." The reason for the strong interest of chemical/fertilizer agribusinesses in diversification may be due to pressures from the farm crisis and water quality concerns. Chemical/fertilizer agribusinesses may have more of a vested interest in diversification while the seed companies may prefer that concentration on corn and soybeans be continued.

Table 2. Means and standard deviations relating to the extent of cooperation among agribusinesses and other agencies in providing educational information

Education Agency	N	Mean ($\bar{X}$)	Std. dev.
1. Vocational agriculture adult program	46	445.91	84.96
2. Vocational agriculture--FFA program	46	482.37	90.58
3. Private individuals	48	511.79	106.52
4. Cooperative Extension Service	49	497.59	107.22
5. Other agribusinesses	48	459.20	89.38
6. University or area college agriculture departments	47	478.71	99.69
7. Chamber of Commerce	43	435.18	97.72
8. Soil Conservation Service	44	432.03	101.19
9. Farmer's Home Administration	45	408.44	107.30
10. Agricultural Stabilization and Conservation Service	44	447.08	123.77
Grand mean	46	459.83	100.83

Table 3. Group means, standard deviations, and analyses of variance relating to the perception of agribusinesses in supplying up-to-date information to agriculture teachers

Agricultural program	Agribusiness types: Livestock feed	Agribusiness types: Chemical/ fertilizer	Agribusiness types: Seed	F-value	Probability
	n Mean SD	n Mean SD	n Mean SD		
1. New skills for new careers in agriculture	18 586.33 64.66	23 596.675 81.32	8 621.07 72.77	0.61	0.54
2. Soil conservation and tillage	17 589.66 89.72	23 549.09 86.34	8 577.01 80.60	1.12	0.33
3. Farm chemicals	17 596.92 84.33	23 599.99 99.78	8 551.83 59.47	0.93	0.40
4. Computer (remote data base)	18 556.50 80.84	22 583.12 71.89	8 549.96 46.89	0.96	0.39
5. Crop scouting and entomology	16 538.87 75.64	23 537.14 85.70	8 556.30 41.43	0.19	0.82
6. Diversification in agriculture	17 565.18 99.17	23 623.99 80.52	8 563.43 38.09	3.06	0.05*
7. Hay and pasture management	17 503.40 81.27	23 476.74 93.84	8 491.57 72.53	0.47	0.63
8. Farm safety	17 571.71 75.69	22 552.27 102.11	8 535.81 78.67	0.48	0.62
9. Wildlife management	16 506.53 84.74	22 486.51 96.98	7 488.22 42.58	0.27	0.77
10. Agricultural marketing	18 611.20 72.05	23 623.55 76.53	8 680.37 74.06	2.47	0.09

*Significant beyond the 0.05 level.

CONCLUSIONS

The interrelationships and interdependence of the agribusinesses were reflected in the uniformity in their use of information dissemination strategies. "Farm visits" and "meetings" were highly used by all. Agribusinesses used a wide variety of strategies rather than focusing on a few.

Agribusinesses reported the extent of their cooperation with other educational groups in Iowa as seldom. This rating was in contrast with the high extent of agribusiness educational cooperation reported by others (Pascalar, 1986; and Bowen, 1986).

Agribusinesses in this study were uniform in their support of supplying up-to-date information to agriculture teachers. The program topics, "Marketing" and "New skills for new careers," were rated highly by all three types of agribusinesses. "Diversification of agriculture" was supported more strongly by chemical/fertilizer agribusinesses than by seed agribusinesses.

RECOMMENDATIONS

Implications of these findings include:

1. Agri-educators need to look at the information dessemination strategies used by agribusinesses and determine what has made them effective. Educators should consider widening their use of educational strategies.

2. Agri-educators in Iowa need to improve their relationships with agribusinesses. Involving agribusiness representatives in planning programs and school curricula would ensure the incorporation of industry ideas and materials into agricultural instruction. Education/agribusiness cooperation would help in preparing students for profitable career positions in the agribusiness industry.

3. Agri-educators need to restate their objectives to match the present agricultural situation. They need to redirect their goals toward marketing of farm products, new agricultural careers and diversification of agriculture.

SUGGESTIONS FOR FURTHER RESEARCH

Further research is needed to:

1. Determine how to inculcate agribusiness ideas into agricultural education.

2. Determine the specific subject areas that will help students secure jobs in the agribusiness arena.

3. Determine the willingness of the agribusiness industry to support the advanced education of potential agri-educators.

REFERENCES

Bowen, B. E. (1986). About the business of agriculture. The Agricultural Education Magazine 58(9),3-4.

Directory of Iowa Manufacturers, 1985-1986. (1985). (16th ed.) Des Moines: Iowa Development Commission.

Harris, C. S. (1982). More teaching aids: It's in the mail. Agri Educator 7(1),9,10 & 12.

Hillyard, L. L. (1979). Educational needs of adult farmers in the West Liberty Community School District. Unpublished Master's Thesis, Iowa State University, Ames.

Johnson, M. (1982, May/June) Can mass media change behavior? Journal of Extension 20,10-14.

McCormick, F. (1986). Staying current: Professional affairs and the agricultural education division. The Agricultural Education Magazine 59(5),6-9.

Pascalar, R. C. (1986). Beef breed associations: A valuable resource for teachers. The Agricultural Education Magazine 57(1),14-16.

Wolins, L. & Dickenson, T. (1973). Transformation to improve reliability and/or validity for affective scales. Educational and Psychological Measurement 33,711-713.

Woolverton, M. W., Cramer, G. L. and Hammonds, T. M. (1985). Agribusiness: What is it all about? Agribusiness 1(2),1-3.